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14. ABSTRACT Collaboration Around Research and Education (CARE) in Prostate Cancer is a partnership between two universities, Duke University School of Nursing and Bennett College for Women (Bennett), an historically black college or university (HBCU). Our goal is to build a collaborative relationship between Duke University and Bennett that brings together students and faculty mentors to facilitate opportunities for underrepresented minority students to learn about prostate cancer research. To accomplish this goal, we are capitalizing on the strengths of both universities to conduct a 10-week in residence didactic and hands-on training program to expose undergraduate students to prostate cancer prevention, detection and control, and basic science and clinical research. The objectives of the CARE program are to provide undergraduate nursing students with mentored experiential learning to (1) understand the burden of prostate cancer; (2) develop a beginning level of competence in technology resources for information gathering and data management in prostate cancer research; (3) obtain introductory knowledge about the research process (4) gain hands-on experience in clinical and basic science laboratory methods and research processes, and begin to understand community-based prostate cancer control activities; and (5) experience role model development for research and healthcare practice careers, and begin to build networks with researchers and health professionals in a Research I environment. Four undergraduate students participated in this 10-week prostate cancer research mentored experience.					
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Table of Contents

	Page
Introduction.....	4
Body.....	6
Key Research Accomplishments.....	10
Reportable Outcomes.....	11
Conclusions.....	11
References.....	13
Appendices.....	17

Introduction

This is the first year progress report for Award W81XWH-05-1-0209. The report starts with an overview of the program, followed by a report of Statement of Work.

CARE is a partnership funded by the United States Department of Defense between two academic programs, Duke University School of Nursing and Bennett College for Women (Bennett), an historically black college or university (HBCU). Our goal is to build a collaborative relationship between Duke University and Bennett that brings together students and faculty mentors to facilitate opportunities for underrepresented minority students to learn about prostate cancer. CARE is marketed by Bennett to current freshman and sophomore students who have identified a science major. Applications are accepted from a large pool of students who have a 3.0 grade point average and interest in the program. Students are interviewed and pre-selected by Bennett, followed by final selection by Dr. Marva Price, DrPH, RN, Duke to match the faculty mentor interests at Duke. Dr. Sekara R. Basavaraju (*Dr. Rao*), Bennett College for Women, is the contact and mentor responsible for the program on the Bennett campus. Following the summer internship, selected students are expected to maintain monthly contact with Dr. Rao during the fall semester and periodic contact during the remaining semesters. Overall GPA will be reported to Dr. Price at Duke for each semester through graduation.

The students engage in a one time concentrated mentored 10-week summer experience at Duke University School of Nursing. In addition to the summer concentration in research, an intent of this program is to provide continued academic support to facilitate student success on to successful graduation and graduate or professional education in a science or health science career. The 10-week summer program includes didactic, observational, and experiential training and education. Mentoring for psychosocial support, academic success and career development, and role modeling are strong features of this program. This program seeks to provide students from a minority liberal arts college setting with mentored experiential learning to:

(1) Understand prostate cancer disease.

In weekly seminars, students read and discussed research literature from various scientific journals related to prostate cancer research across a number of disciplines, but also research related to development of their project. The students prepared abstracts, PowerPoint presentations, and posters for conferences.

(2) Develop a beginning level of competence in technological resources for information gathering and data management in prostate cancer research, and writing about and presenting the research.

Students were tutored by a medical center librarian to learn computer-based literature searches which were necessary for their prostate cancer summer project development. Students were taught the use PowerPoint presentation software, and data management software, such as Excel and SPSS, for organizing and presenting prostate cancer screening data.

(3) Acquire an introduction to the research process through a mentored independent research project addressing an aspect of prostate cancer control, work with the mentors prostate cancer programs of research, and observations and interactions with other research faculty in the research institution. Students observed an institutional review board meetings and the role of clinical trials in cancer treatment.

(4) Gained hands-on experience in community-based prostate cancer screening and detection activities.

Students worked with the Duke University Medical Center's Division of Urology, to conduct the annual free prostate cancer screening clinics during September 21-23, 2007.

(5) Experience role model development for research and healthcare practice careers, and begin to build networks with researchers and health professionals in a Research I environment.

On-site interaction with research faculty and consultant mentors in the host institution. Interaction and networking with peer scholars and faculty at urology grand rounds and conferences.

PROGRAM GOALS

(1) Understand the burden of prostate cancer, particularly among African Americans

- The PI maintains a Prostate Reference Notebook of research publications about prostate cancer screening and detection. Students will tour and learn to use the library, and have a private session with a librarian to learn to do searches. Students will update, read, and discuss these teaching materials in weekly seminars.
- By the end of the 10 weeks, students will develop a PowerPoint presentation based on their mentor's research. The summer student with the best presentation on the project will attend the all expense paid Biennial Intercultural Cancer Conference, Washington, D.C. in April 2008 where cancer burden and minorities, and cancer control science is the focus of this conference.
- All students will be required to attend the all expense paid one-day University of North Carolina Minority Health Conference, February 2008, where poster display by students and oral presentations by professionals highlight the health of minorities.

(2) Develop a beginning level of competence in technological resources for information gathering and data management in prostate cancer research, and writing about and presenting the research.

- Students will participate in writing activities planned for them during the summer that focuses on understanding how to read scientific journal articles and how to write about their research experiences.
- Students will be tutored by a medical center librarian to learn how to conduct computer-based literature searches in scientific medical journals.
- Students will be taught the use of data management software, such as Excel, and SPSS for organizing and analyzing research statistics.

- (3) Acquire an introduction to the research process through a mentored independent research project addressing some aspect of prostate cancer control, work with the Duke mentor's prostate cancer research, and observations and interactions with research faculty at Duke University Medical Center.
 - Program mentors have ongoing prostate cancer research. Project staff and individual mentors will assist students in developing and refining a research question, and determining a manageable scope for the mentee's individual research project.
 - Students will observe institutional review board meetings and the role of clinical trials in cancer treatment.
 - Students will meet together in weekly lunch time seminar to facilitate internship activities outside of the mentor-mentee research focus.
- (4) Gain hands-on experience in a community service prostate cancer control activity in Greensboro during the academic year. Ideas for this project are unlimited and will be generated by the students under Dr. Rao's supervision.
- (5) Experience role model development for research and healthcare practice careers, and begin to build networks with researchers and health professionals in a major university environment
 - On-site interaction with research faculty and consultant mentors at Duke University Medical Center.
 - Interaction and networking with peer scholars and faculty at conferences.

Program Design: This intense summer program is based on concentrated one-to-one mentoring of biology students by mentors, with didactic, observational, and experiential training in prostate cancer education and research. Mentoring for psychosocial support, academic success and career development, and role modeling are strong features of this proposed program.

Body

In our first program year, four students and two alternates were selected for the PRIME program from a pool of 8 applicants (all females as Bennett College for Women has no male students). Three students selected were completing their sophomore year, and one student was completing her freshman year. Two alternates were selected. Scientific faculty mentors with prostate cancer related research were recruited from among Duke University Medical Center's Research I environment. Three faculty volunteered as mentors and were matched to students. One of the faculty provided mentorship to two students, and two other faculty mentored one student each.

Three Duke University Medical Center faculty served as mentors:

- Leon Sun, MD, PhD, an associate research professor, Division of Urology, Department of Surgery, One student
- Stephen Freedland, MD
Assistant Professor of Urology and Pathology

Director of Outcomes and Translational Research, Urological Surgery
Two students

- Thomas J. Polascik, M.D, F.A.C.S, Associate Professor, Division of Urology, Dept of Surgery
Two students

All mentoring faculty are members of the Duke University Medical Center Cancer Prevention and Control Program.

During the 10 weeks, the following activities occurred:

- Duke University identification badges and parking permits secured; tour of the Duke University campus, medical center, and nursing school.
- Tour of the medical center library.
- Completion of two Safety, three HIPPA and three Institutional Review Board (IRB) tutorial education modules prior to access to mentors' databases. Three IRB tutorial modules and the post-test for each. The following two modules were required:
 - Protecting Research Subjects
 - What Counts As Research with Human Subjects
- The third required module could be selected from among the following:
 - Informed Consent for Research
 - Protecting the Confidentiality and Privacy of Research Participants
 - Research in Emergency Settings
 - Social Science Research in a Medical Setting
 - Using Databases in Research

As many as ten additional laboratory modules were required, depending on the labs a student would have access, before starting basic laboratory experiences.

- Library hands-on session on conducting searches of the scientific journal databases. Students learned to conduct searches related to their selected project. The projects were based on the work of their mentors.
- Instruction and practice sessions on how to read and understand research literature.
- Weekly two hour seminars for instruction on writing a research abstract in preparatory for writing an abstract for their own work. With guidance from their mentors, students selected a research project based on the work of their mentors. The seminar sessions also were used for trouble shooting professionalism issues such as student-mentor communication.
- Hands-on instruction in computer programs: Excel, PowerPoint, and SPSS.

- Direct mentorship by the faculty mentor over the 10 weeks. This included basic science laboratory procedures and experiments, data entry, and literature searches. The students shadowed for select sessions each week in the urology clinic; multidisciplinary prostate clinic where surgeons, radiologists, medical oncologists, and other cancer specialist meet together with the patient to discuss the next steps in treatment; observation in a urology clinic observing work ups and treatment with patients during and after diagnosis for prostate cancer and other urologic disorders; and several theater observations of actual surgeries partnered with a urology fellow to interpret the surgical processes.
- Students attended one Duke University Medical Center Institutional Review Board (IRB) meeting to observe a team of medical center IRB members present and evaluate new and renewal study proposals.
- Final day PowerPoint presentation on each student's project. These were presented to an assembly of mentors, host and home faculty, family members, and friends, followed by a reception in celebration of the students' program achievements. Certificates of participation were presented to each of the students.
- At the end of the program, a paper-pencil evaluation was completed by each student; a face-to-face interview was conducted with each mentor. Feedback from these two evaluations was used in preparation for the subsequent summer.
- September 23 and 24, 2007, gained hands-on experience in community-based prostate cancer control activities in Durham, NC. The students assisted with the registration, clinic flow, and consenting process in two day-long prostate cancer screening clinics.
- All four students attended the one-day 29th Annual Minority Health Conference sponsored by the University of North Carolina School of Public Health, Minority Health Caucus, Chapel Hill, N.C., February 29, 2008. In addition to the scientific presentations, students networked with graduate faculty, and especially graduate students from various graduate and professional programs across the United States.

Statement of Work

Years 1, 2, 3

Task 1: Bennett College: Plan for marketing CARE program to Bennett Biology majors and students with sufficient science courses needed to participate in the program

Months 1-3 (*January, February, March*)

- a. Developed recruitment, application, and interview process.

- b. Minimal qualifications: minority student, student availability for summer program, quality of the program interest essay, and 3.0 minimal Grade Point Average (GPA). From the applicant pool, a minimum of eight students were selected. The final selection included the four top applicants with two remaining as alternates. One alternate was selected to complete the pool of four students.
- c. Interviews conducted by the Duke Program Director and Bennett Faculty Adviser.
- d. A reception for selected students was held at Bennett; reception was attended by the students, friends, faculty and administrators, along with Dr. Price and the summer program research assistant, Diana Tyson, MA, PhD candidate.
- e. payroll process initiated with Bennett for summer stipends to be direct deposited in the students' personal checking accounts on a biweekly basis.
- f. Planned monthly mentoring contact schedule with Dr. Rao for fall and spring semesters, who maintained mentoring session with students at least once each month during each semester.

Task 2: Months 4-5 (April, May)

- a. Bennett: Planned ongoing Bennett mentoring schedule.
- b. Bennett: Checked end of year GPAs for applicants.
- c. DUKE: Met with mentors to refine schedule for 10-week summer program

Task 3: DUKE: Months 6-9 (June, July, August, September)

- a. Conducted 10-week summer program
- b. Abstract and PowerPoint preparations ongoing through the 10 weeks.
- c. Sought opportunities for ongoing grand rounds, medical center and nursing special seminars and presentations, workshop, and seminar opportunities for student attendance
- d. Ongoing meetings held with grant staff (research assistant and PhD consultant)
- e. Conducted evaluation and wrap-up
- f. Mentor and student evaluations
- g. Program administration tasks
- h. (Year 1- sought presentation and paper opportunities for students during the 2007-2008 academic year

Task 4: Bennett: (September) Coordinate student volunteer activity for September prostate cancer education month. Dr. Roa recommended that the students participate in the Duke Medical Center free prostate cancer screening weekend in Durham, as opportunities for prostate education outreach into the Greensboro community would be difficult to originate, supervise, and coordinate. Students participated in the Durham two day screening activity.

Task 5: Months 10-12 (October, November, December)

- a. DUKE: Prepare students for abstract submissions for the first Department of Defense Prostate Cancer IMPaCT conference held in Atlanta, September 2007. Three students submitted abstracts. Three gave oral presentations.
- b. Bennett: Check GPA at the end of fall semester-need to maintain 3.0 overall GPA throughout project. Students maintained their GPAs successfully.

- c. Bennett: Year 1 - Facilitate registration for the University of North Carolina Minority Health Conference for February 29, 2008; students attended.
 - d.
 - e. Year 2 – prepare registration for the biennial Intercultural Cancer Conference (ICC) participation for April 3-6, 2008. Student Rachael Williams was selected to attend based on her ability to be away from classes, and her strength in competitive presentation ability. Student presentations at the conference are juried.
 - f. Bennett: Facilitate continued monthly mentorship
- Task 6: DUKE: Overall program evaluation and submission to DoD
Month 12
- Task 7: Bennett: Preparation for poster presentations at Minority Health Conference, University of North Carolina, Chapel Hill
- Task 8: DUKE: Department of Defense annual program evaluation
Month: February 2008

Key Research Accomplishments:

The students developed abstracts based on their summer research and made oral presentations at the School of Nursing for the final day of the summer program:

- Nitrecus Simmons, rising junior, under the mentorship of basic science research mentor Stephen J. Freedland, MD, Division of Urologic Surgery, Dept of Surgery, Duke Prostate Center
“A Comparative Study of Genetic Susceptibility and Risk Factors for Men with and without Prostate Cancer”
- Cymara Tolbert-Warren, Bennett College for Women, junior, under the mentorship of basic science research mentor Stephen J. Freedland, MD, Division of Urologic Surgery, Dept of Surgery, Duke Prostate Center, Division of Urologic Surgery, Dept of Surgery, Duke Prostate Center
“Prostate Cancer: How Diet Effects Tumor Growth”
- Rachael Williams, rising senior, under the mentorship of clinical science research mentor Leon Sun, MD, PhD, Division of Urologic Surgery, Dept of Surgery, Duke Prostate Center
“Clinical and Pathological Variables: Predictors of PSA Recurrence after Radical Prostatectomy”
- Tiera Wright, rising sophomore, under the mentorship of clinical and basic science research mentors Thomas J. Polascik, MD, FACS and Vladimir Mouraviev, MD, PhD, Division of Urologic Surgery, Dept of Surgery, Duke Prostate Center
“Targeting the Source: The Effectiveness of ProstaScint”

Reportable Outcomes:

Successful completion of the summer program for four students; students prepared abstracts based on their summer laboratory experiences and presented orally and conducted poster discussions over the course of the summer and academic year. Students maintained a minimum of a 3.0 GPA and are continuing in their respective pre-med majors with high interest in medical school or other graduate and professional science and research programs.

Three students, Simmons, Williams, and Tolbert-Warren submitted abstracts and gave presentations at the Department of Defense IMPaCT conference in Atlanta, September 2007.

Other student abstract submissions which were accepted for presentation were:

Rachael Williams, Florian R. Schroeck, Kadi-Ann N. Bryan, Marva Price, Leon Sun, and Judd W. Moul. "Clinical and Pathological Variables: Predictors of PSA Recurrence after Radical Prostatectomy". 9th Annual Surgical Urologic Oncology Meeting, Natcher Conference Center, National Institutes of Health, Bethesda, December 4-5, 2008.

Bryan, K.A.N., Florian, S.R., **Williams, R.**, Price, M., Sun, L., and Moul, J.W. "Independent predictors for PSA recurrence after radical prostatectomy: Gleason score 3+4 versus 4+3 and percent tumor involvement". Podium presentation, Southeastern Section American Urological Association 72nd Annual Meeting, San Diego, March 2008.

Cymara Tolbert-Warren, Cooper Buschemeyer, Joseph Klink, John Mavropoulos, Lionel Banez, Jay Jaychadran, Tracy Johnson, Susan Poulton, Stephen Hursting, Marva Price, and Stephen Freedland. "Effect of Intermittent Caloric Restriction on Prostate Cancer Growth and Survival in Mice". Duke University Medical Center Annual Cancer Symposium, Durham, March 12, 2008.

Conclusions

Program Evaluation:

Year 1 of this program was highly successful. Four African-American students from a small private HBCU, with a student population less than 300 students, had a beginning level of learning experience in basic and clinical prostate cancer research. Students evaluation feedback indicated that they had been well-exposed to laboratory and clinical research, an area they had not been involved in before. They felt that they found a whole new body of knowledge from their mentors. Further, parts of their mentored experience will be applicable in improving their understanding of research in their academic programs and future scientific careers.

These students were engaged in a concentrated 10-week mentored summer research program. All of the students were at similar levels of unexposure to cancer research and all had the potential and the opportunity to gain a great deal from the internship. All of the experiences and activities were completely new for the participants. They had no research training; nor had they been exposed to understanding the prostate function or disease state. Thus, this program was able to provide a learning experience and address student needs that may not be addressed elsewhere or at any other time in their academic career. Furthermore, we were very successful in meeting the proposed goals of the program and in some areas even reaching beyond our predetermined expectations, particularly with the amount of materials on the prostate and research that the students were able to learn and understand, along with their individual project development which resulted in abstract submissions for conferences. During their final presentations students addressed an audience of approximately 75 Duke faculty and staff, one Department of Defense contractor, community members and family, engaging in a discussion of the complex physiology, basic science, clinical applications, research methodology, and prostate cancer prevention and control.

Unexpected Difficulties Encountered:

One student, Tiera Wright, did not enroll in school in the Fall semester due to financial challenges. Although having completed just the freshman year in college, she was perhaps the most academically strong of the four students demonstrated by her quick acclimation to the summer laboratory environment and project progress. Her withdrawal from college was indeed a loss. She has continued in a community college environment in her hometown in New Jersey.

So What

We believe that we have an excellent undergraduate research training model for collaboration between a small private liberal arts HBCU, but also strong in it's science majors. We have a program that has proven to be exemplary, and we seek to continue to offer a high level of mentorship in the next two years of this grant, and to foster students in seeking graduate and professional school admission, and commitment to cancer research.

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Appendices

- PI Curriculum Vitae
- Meeting Abstracts
- Study Personnel
- PI Contact Information

**DUKE UNIVERSITY MEDICAL CENTER
CURRICULUM VITAE**

Date Prepared: April 2008

Name (complete with degrees): Marva L. Mizell Price, DrPH, MPH, FNP, FAAN

Primary academic appointment: School of Nursing

Primary academic department: School of Nursing

Secondary appointment (if any) – (department): Duke University Medical Center Cancer Prevention and
Control

Present academic rank and title (if any): Assistant Professor

Nursing Licensure: North Carolina Registered Nurse

Original Date of License (Month/Day/Year): August 1972

Renewed November 2007

Specialty certification(s) and dates (Month/Day/Year):

St. Margaret's Hospital, Boston: Natural Family Planning Instructor, 1988.

American Nurses Credentialing Center (ANCC): Family Nurse Practitioner, Issued 1982; recertified March
2002, 2007-2012.

North Carolina Medical Board of Nursing: Family Nurse Practitioner, Initial Approval 11/ 1974; Reapproved
to 2008.

Re-credentialed by Duke University Medical Center Credentialing Service, 2007

Social Security number: xxx-xx-2343

Date of birth: 11-25 Place: Columbia, N.C. USA

Citizen of: USA

Visa status (if applicable): N/A

<u>Education</u>	<u>Institution</u>	<u>Date (Year)</u>	<u>Degree</u>
College	School of Nursing N.C. Agricultural & Technical State University Greensboro, NC	1972	B.S.N.
Graduate or Professional School	School of Public Health, Department of Maternal and Child Health, University of North Carolina, Chapel Hill, NC	1974	Master of Public Health (M.P.H.) in Maternal Child Health
	School of Nursing University of North Carolina, Chapel Hill, NC	1974	Family Nurse Practitioner
	School of Nursing University of Washington, Seattle, Child Development and Mental Retardation Center	1979	Post-Masters in Developmental Pediatrics
	School of Public Health, Department of Maternal and Child Health and Program in Public Health Leadership, University of North Carolina, Chapel Hill, NC	1997	Doctor of Public Health (Dr.P.H). in Maternal and Child Health and Public Health Leadership
		1995-1997	Predoctoral Fellow, Cancer Prevention and Detection: University of North Carolina Lineberger Comprehensive Cancer Center, Chapel Hill

Scholarly Societies/Awards:

1973-present	Invited, Delta Omega Honor Society in Public Health
1974- present	Invited and Inducted, Sigma Theta Tau, Alpha Alpha Chapter, International Honor Society in Nursing; Junior and Senior Counselor, 1978-1980
1993	Great 100 Award For Nursing Excellence In North Carolina for Outstanding Contributions to the Profession of Nursing
1995-1996	Albert Schweitzer Fellowship
1995-1997	Lineberger Comprehensive Cancer Center, University of North Carolina, Pre-Doctoral Fellowship
1995	American Nurses Association Ethnic Minority Fellowship (accepted as unfunded award)
1996- present	Inducted, Charter Member, Sigma Theta Tau, Mu Tau Chapter, International Honor Society in Nursing
1996	Alumni Student Award, UNC School of Public Health, awarded at the UNC School of Public Health Annual Alumni Conference
1997	Community Health Nurse of the Year, North Carolina Nurses Association
2002- present	Invited and Inducted, Fellow, American Academy of Nursing

2005 American Academy of Nurse Practitioners State Award for Excellence

2007 Invited and inducted, Fellow of the American Academy of Nurse Practitioners

Professional training and academic career:

<u>Institution</u>	<u>Position/Title</u>	<u>Date</u>
Post-Baccalaureate:		
Annie Penn Memorial Hospital Reidsville, NC	Registered Nurse Rotated on all services in a 120 bed community hospital (Medical/surgical, ER, Delivery Room, Pediatrics, Recovery Room)	1972-1974
Post-Master's:		
University of North Carolina, School of Public Health, Department of Public Health Nursing for Orange Chatham Comprehensive Health Services, Chapel Hill, NC	Family Nurse Practitioner	1974
University of North Carolina Employees Health Services, Chapel Hill, NC	Family Nurse Practitioner	1974-1976
University of North Carolina, Chapel Hill, NC Division for Disorders of Development and Learning (currently Center for Development and Learning)	Family Nurse Practitioner	1976-1982
State of North Carolina Department of Health and Human Services, Winston Salem & Raleigh, NC	Family Nurse Practitioner and Nursing Consultant, Family Planning and Women's Health, Division of Maternal Child Health	1982-1991
Duke University Medical Center, Durham, NC Department of Obstetrics and Gynecology, Division of GYN Oncology	Family Nurse Practitioner and Program Coordinator, Women's Cancer Screening Program & Cervical Dysplasia Private Clinic	1991-1994
Chatham County Health Department Pittsboro, NC	Interim Health Director	1992
Kaiser Permanente Durham-Chapel Hill Office, NC	Chief Executive Officer	1994
Randolph County Health Department, Family Planning Clinic, Asheboro, NC	Family Nurse Practitioner	1996
Post-Doctorate:		
Duke University School of Nursing, Durham Family Nurse Practitioner Program Program Director, Family Nurse Practitioner Program	Clinical Assistant Professor Assistant Professor	1996-2001 May 2002-present

Publications:

1. Refereed journals:

1. **Price, M.M.** (1980). Critique of the Milani-Compartetti Motor Development Screening Test. Physical And Occupational Therapy In Pediatrics, 1 (1), 59-68.
2. Smith, E.M., Phillips, J.M., & **Price, M.M.** (2001). Screening and early detection among ethnic minority women. Seminars in Oncology Nursing, 17 (3), 159-170.
3. Van Buren, K.G. & **Price, M.M.** (2002). Recognizing Obstructive Sleep Apnea in Children. The American Journal for Nurse Practitioners, 6(7), 9-17.
4. Brown, S.M. & **Price, M.M.** (2003). Man with swollen lips and tongue. Clinician Reviews, 13 (4): 81-86. (*Ace-Inhibitors for Hypertension*)
5. National Organization of Nurse Practitioner Faculty (NONPF) Practice Doctorate Task Force: Marion, L., Viens, D., O'Sullivan, A.L., Crabtree, K., Fontana, S. **Price, M.** (2003). The Practice Doctorate in Nursing: Future or Fringe? NONPF Practice Doctorate Task Force. Topics in Advanced Practice Nursing eJournal 3 (2), 2003. © 2003 Medscape.
6. Marion, L., O'Sullivan, A.L. Crabtree, M. K., **Price, M.** Fontana, S. (2005). Curriculum Models For The Practice Doctorates In Nursing. Medscape. Topics in Advanced Practice Nursing eJournal 5 (1), 2005. © 2005 Medscape.
7. **Price MM**, Hamilton RJ, Robertson CN, Butts MC, Freedland SJ. Body Mass Index, Prostate-Specific Antigen, and Digital Rectal Examination Findings Among Participants in a Prostate Cancer Screening Clinic. Urology. 2008 Feb 9; [Epub ahead of print]
8. **Price, M.**, Hamilton, R.J., Robertson, C.N., Butts, M. C., & Freedland, S. J. (*in press*). Body Mass Index, PSA, and Digital Rectal Examination Findings among Participants in a Prostate Cancer Screening Clinic. Urology.
Florian R. Schroeck, Tracey L. Krupski, Leon Sun, David M. Albala, **Marva M. Price**, Thomas J. Polascik, Cary N. Robertson, Alok K. Tewari, and Judd W. Moul. "Satisfaction and regret after three different types of radical prostatectomy". Journal of Urology, *under review*.

2. Non-refereed publications:

1. **Price, M.M.** (1980). Why do they suck their thumbs? Baby Talk, 46 (5), 28-29.
2. **Price, M.M.** (1982). Thumbsucking, Pediatric Currents, 31 (1).
3. **Price, M.M.** (1985, April 7; 1980, October 5). Thumb, finger sucking common behavior in caring for kids, Chapel Hill Newspaper.
4. **Price, M.M.** (1986). Nurse practitioners are also caught in national malpractice insurance crunch, Contraceptive Technology Update, American Health Consultants: Atlanta, 7 (11), 138-139.
5. **Price, M.M.** (1987). OC user's recurrent candidiasis may require multiple treatment strategies, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (1), 9-11.
6. **Price, M.M.** (1987). Nurse practitioner has complex role in managing high-cholesterol patients, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (4), 49-50.
7. **Price, M.M.** (1987). Help long-term OC users manage healthy, gradual return to fertility, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (6), 82-83.
8. **Price, M.M.** (1987). Try varied approaches to encourage our OC patients to stop smoking, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (8), 101-103.
9. **Price, M.M.** (1987). North Carolina's NFP initiative is effective and well received, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (10), 133-134.
10. **Price, M.M.** (1987). Physically, mentally disabled teens require special contraceptive care, Contraceptive Technology Update, American Health Consultants: Atlanta, 8 (12), 154-156.
11. **Price M.M.** (1988). Find alternatives for patients using 80 to100 mcg estrogen OCs. Contraceptive Technology Update. 9 (7): 86-87.
11. **Price, M.M.** & Price, L.N. (2002). Concerns of white and African American consumers about colon cancer screening. In M. Kowalski (Ed.). Transcultural Nursing Special Interest Newsletter – Oncology Nursing Society, 12 (1), 1-3.
12. **Price, M.M.** & Price, L.N. (2002). Concerns of white and African American consumers about colon cancer screening. Prevention and Detection Special Interest Newsletter – Oncology Nursing Society, 12 (3), 1-3.
13. **Price, M.**, Flagler, S., Honig J., Huffstutler, S., Lock, S., and Stegbauer, C. (2006). Recommendations for Faculty Qualifications, Faculty Development, and Student Admissions

Criteria. Retrieved October 9, 2006, from the National Organization of Nurse Practitioner Faculties Practice Doctorate Resource Center Web site:
<http://www.nonpf.com/NONPF2005/PracticeDoctorateResourceCenter/PDsubcommittee1.htm> &
<http://www.nonpf.com/NONPF2005/PracticeDoctorateResourceCenter/PDResourceCenter.htm>

3. Chapters in books:

1. **Price, M.M.** (1980). Special Populations Sexual Abuse of the Developmentally Disabled. In D. Kay, Leadership Training Workshops. Bethesda: National Institute of Mental Health, National Center for Prevention and Control of Rape. Training Grant No. T31MH15664.
2. **Price, M.M.** (1985). Nursing Care of the Child With A Mental Deficiency. In S.R. Mott, N.S. Fazekas, & S.R. James, (Eds.), Nursing Care of Children and Families, pp. 755-783, Menlo Park, CA: Addison-Wesley Publishing Co.
3. Phillips, J. **Price, M.M.** (2002). "Breast Cancer Prevention and Detection: Past Progress and Future Directions". In K. Jennings-Dozier & S. Mahon, S. (Eds.), Cancer Prevention, Detection and Control: A Nursing Perspective. Pittsburgh, PA. Oncology Nursing Press.
4. **Price, M.M.** (2002). Health Promotion with African American women. In C.C. Clark, Health Promotion in Communities: Holistic and Wellness Approaches, pp. 355-381, New York: Springer Publishing Company.

4. Books: N/A

5. Non-authored publications (contributions noted in author's acknowledgements):

1. Public Sector NFP Program, (1988). The NFP Reader, 5 (1), Bethesda: KM Associates.
2. Nurses, physicians prefer different postpartum prescriptions practices, Contraceptive Technology Update, (1986). American Health Consultants: Atlanta. 7 (9).
3. - Exams Key to Detecting Cancer In Men, Duke Center for Integrative Medicine, The Herald Sun, August 7, 2003, Cancer Seminars to Open Today, The Herald Sun, January 30, 2004.

6. Other Materials:

a. Published scientific reviews (for mass distribution):

Book Reviews:

1. **Price, M.M.** (1983). Effectiveness of pediatric primary care. J. S. O'Shea & E.W. Collins, (Eds.), in Physical And Occupational Therapy in Pediatrics.
2. **Price M.M.** (1986). Diagnosis and management of the hospitalized child. H.B. Levy, S.H. Sheldon, & R.F. Sulayman (Eds.), in Physical and Occupational Therapy in Pediatrics, 6 (1), 109-110.
3. Lederer, et al. (1986). Care planning pocket guide. Ed 2. Menlo Park, CA: Addison-Wesley.
4. **Price, M.M.** (1986). Minimizing high-risk parenting. R.A. Hoekelman & P.A. Media (Eds.), in Physical and Occupational Therapy In Pediatrics, 6 (2), 125-126.
5. **Price, M.M.** (1987). Chronically ill children and their families. N. Hobbs, J.M. Perrin, & H.T. Ireys (Eds.), in Physical And Occupational Therapy In Pediatrics, 7 (3), 107-108.
6. **Price, M. M.** (1988). Children with handicaps: A medical primer. Ed 2. M.L. Batshaw & Y.M. Perret (Eds.), in Physical And Occupational Therapy in Pediatrics, 8 (1), 117-118.
7. **Price, M.M.** (1989). The invulnerable child. E.J. Anthony & B.J. Cohler (Eds.), in Physical And Occupational Therapy In Pediatrics, 9 (3), 160-161.
8. Scoggin, J. & Morgan, G. (2001). Practice guidelines for obstetrics and gynecology. Baltimore: Lippincott, Williams & Wilkins.

b. Selected Abstracts:

1. **Price, M.M.** (1986, May). "Nurse Practitioner Prescribing Practices", Paper presented at the Annual Conference on Women's Health for Nurse Practitioners, Emory University, Atlanta
2. **Price, M.M.** (1988, May). "Helping Family Planning Patients Stop Smoking", Paper presented at the Annual Conference on Women's Health for Nurse Practitioners, Emory University, Atlanta
3. **Price, M.M.** (1989, May). "Is There an Ideal Contraceptive for the Breastfeeding Woman?" Paper presented at the Annual Perinatal Nursing Conference, Duke University Medical

- Center, Durham, NC
4. **Price, M.M.** (1993, February). "Cancer Prevention and Early Detection – Changing Lifestyles in Vulnerable Populations", Paper presented at the Health Promotion Disease Prevention Nursing Conference, Friday Conference Center, University of North Carolina School of Nursing, Chapel Hill
5. **Price, M.M.** (1994, April). "Cancers That Worry Women the Most and Screening Dilemmas", Paper presented at the Annual Spring Symposium for Primary Care Nurse Practitioners, Charlotte.
6. **Price, M.M.** (1994, October). "Developing and Using Computer Generated Slides for Oral Presentations", Paper presented at the Dissemination Workshop during the Oncology Nurses Symposium on Cancer in African Americans, Atlanta.
7. **Price, M.M.** (1994, October 28-30). "Living with Genital Herpes: Counseling the Patient", Paper presented and Seminar Moderator for the Burroughs Wellcome Pharmaceutical Corporation Nursing Conference on Genital Herpes, Research Triangle Park, NC.
8. **Price, M.M.** (1995, April, Miami; 1995, March, Washington, DC; & 1995, February, Philadelphia). "Breast Health", Papers presented at the National Black Nurses Association Regional Conferences.
9. **Price, M.M.** (1995, August). "Gynecologic Cancers-Cervical Cancer", Paper presented at the National Black Nurses Association National Conference, Washington, DC.
10. **Price, M.M.** (1996, August). "Cervical Cancer", Paper presented at the Oncology Nursing Society Post-Conference Seminar at the Annual Meeting of the National Black Nurses Association, Chicago.
11. **Price, M.M.** (1997, May). "What Your Mother Needs to Know about Breast Health, Paper presented at the 9th Annual National Black Graduate Student Conference, Research Triangle Park, NC.
12. **Price, M.M.** (1997, August). "Cervical Cancer", Paper presented at the North Carolina Baptist Ushers Conference on Cancer Prevention, UNC Lineberger Comprehensive Cancer Center and the UNC School of Public Health Summer Public Health Conference, Raleigh, NC.
13. **Price, M.M.** (1997, August). "Intergenerational Influences on Cervical Cancer Screening", Poster Session presented at the Women's Health Issues – A Global Nursing Perspective, University of Cincinnati, St. Thomas, Virgin Islands.
14. **Price, M.M.** (1997). Generational Influences on Cervical Cancer screening and the capacity of the public health system to assure responsive Services. Dissertation Abstracts International, University of North Carolina, Chapel Hill. Microfiche No. W4.P9462. 1997.
15. **Price, M.M.** (1998, August). "Intergenerational Influences on Cervical Cancer Screening", Paper presented at the 11th Union of International Cancer Congress, Rio de Janeiro, Brazil.
16. **Price, M.M.** (1999, April). Enhancing nurse educators' knowledge base to teach their students cancer prevention and early detection in African Americans; and Using the Albert Schweitzer fellowship program to foster cross-cultural experiences for nurse practitioner students. Symposium conducted at the annual meeting of the National Organization of Nurse Practitioner Faculties (NONPF), San Francisco.
17. **Price, M.M.** (1999, November). "African American Women's Concerns about Cervical Cancer Screening", Paper presented at the American Public Health Association Annual Convention, Chicago.
18. **Price, M.M.** (2000, February). "African American Women's Concerns about Cervical Cancer Screening", Paper presented at the 7th Biennial Symposium on Minorities, The Medically Underserved & Cancer, Addressing the Unequal Burden of Cancer, Washington, DC. Published Abstract p. 41.
19. **Price, M.M.** (2000, March). "African American Women's Concerns About Cervical Cancer Screening", Paper presented at the Howard University School of Nursing Research Day, Washington, DC.
20. **Price, M.M.** (2000, April). "Creating a Faculty Research Opportunity with a Community Prostate Cancer Screening Program", Paper presented at the National Organization of Nurse Practitioner Faculties (NONPF) 26th Annual Conference, Washington, DC.
21. **Price, M.M.** (2000, August 3; July 30). "Follow-up of Men Who Participate in a Free

- Community Day Prostate Cancer Screening Clinic”, Poster Session presented at the 11th International Conference on Cancer Nursing-Building The Future, Oslo, Norway.
22. **Price, M.M.** (2000, August). “Follow-up of Men who Participate in a Free Community Day Prostate Cancer Screening Clinic” and Generational Influences on Cervical Cancer Screening”, Papers presented at the National Black Nurses Convention, Washington, DC
23. **Price, M.M.** (2000, September). “Gynecologic Cancers”, Paper presented at the National Astra Zeneca Challenge Conference for Oncology Nurses, Atlanta.
24. **Price, M.M.** (2000, November). “Free Community Prostate Cancer Screening: Who Attends and Why?”, Paper presented at the American Public Health Association Annual Convention, Boston. Published Abstract – Session 4018.0 p. 202.
25. **Price, M.M.** (2001, February 16). “Free Community Prostate Cancer Screening: Who Attends and Why?” Poster Session presented at the Annual School of Public Health Minority Health Conference, University of North Carolina, Chapel Hill.
26. **Price, M.M.** (2001, September). “Free Community Prostate Cancer Screening: Who Attends and Why”, Paper presented at the Biennial Conference of the Center for Disease Control and Prevention (CDC), Using Science to Build Comprehensive Cancer Programs: A 2001 Odyssey, Atlanta.
27. **Price, M.M.** (2001, October). “Lessons Learned From 58 African American Men About Prostate Cancer Screening”, Paper presented at the American Public Health Association Annual Convention, Atlanta.
28. **Price, M.M.** (2002, June). “Free Community Prostate Cancer Screening in A Small Urban Community”. Poster #1063 presented at the 18th Union of International Cancer Congress, Oslo, Norway. Published Abstract, p. 467.
29. **Price, M.M.** (2002, August). “Prostate Cancer Screening – Who Attends and Why”. Podium presentation at the 12th International Conference on Cancer Nursing 2002: Making A Difference, London. Published Abstract, p. 28.
30. **Price, M.M. & Robertson, C.N.** (2002, September). “Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics”. Poster presentation at the Ninth Annual CapCure Scientific Retreat Program, Washington, D.C.
31. **Price, M.M., Powe, B.D., & Underwood, S.M.** (2003, March). Symposium 22 “From Research to Practice to Policy: Designing Research-Based Interventions Focused on Cancer Prevention and Control Among African-Americans”. 24th Annual Meeting and Scientific Sessions for the Society of Behavioral Medicine, Salt Lake City, Utah.
32. **Price, M.M.** (2003, October). “Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics in Durham, North Carolina” Sixth Annual Sigma Theta Tau Research Day Conference: Health Disparities in Underserved Minority Populations from a Global Perspective. North Carolina A&T State University School of Nursing, Greensboro, N.C. p.13.
33. **Price, M.M.** (2003, October). “International Cancer Care Nurses Attitudes about Cervical Cancer Screening” Sixth Annual Sigma Theta Tau Research Day Conference: Health Disparities in Underserved Minority Populations from a Global Perspective. North Carolina A&T State University School of Nursing, Greensboro, N.C. p.24.
34. **Price, M.M., & Combs, I.** (2003, November 7-9).”How to Use Innovative Health Education and Screening Programs to Promote Health in the African American Community: Durham, North Carolina and Omaha, Nebraska”. Symposium conducted at the 4th Annual Institutes of Learning Conference. Oncology Nursing Society, Philadelphia, Published Abstract p. 27-31.
35. **Price, M.M., Jackson, S.A., & Robertson, C.N.** (2004, March). “Utility of Longitudinal Prostate Specific Antigen Measures in a Screening Population”, Intercultural Cancer Council and Baylor College of Medicine: 9th Biennial Symposium on Minorities, The Medically Underserved & Cancer, Washington, D.C. Published Abstract p. 37.
36. **Price, M.M.** (August 2004). “International Cancer Care Nurses Attitudes About Cervical Cancer Screening”. Podium presentation at the 13th International Conference on Cancer Nursing 2004: Celebrating Diversity, Sidney, Australia. Published Abstract p.
37. **Price, M.M., Jackson, S.A., & Robertson, C.N.** (2004, November). “Utility of Longitudinal Prostate Specific Antigen Measures in a Screening Population”, poster presentation at the 132nd Annual Convention of the American Public Health Association, Washington, D.C.

- Published Abstract p. 37.
38. **Price, M.M.** (2005, June). "Partnering Mentoring and Education in Prostate Cancer Control", Cancer Prevention and Detection Dissemination Colloquium, invited, podium presentation as outcome of the NCI and Oncology Nursing Society grant collaboration, Chicago.
 38. **Price, M.M.**, Robertson, C.N. & Jackson, S.A., (2006, March). "Longitudinal Variation in Prostate-Specific Antigen Levels in a Screening Population". Poster presentation at the 70th Annual Meeting of the Southeastern Section, American Urological Association, Inc, Rio Grande, Puerto Rico, Published Abstract p. 110.
 39. **Price, M.M.**, Robertson, C.N. & Jackson, S.A., (2006, March). "Longitudinal Variation in Prostate-Specific Antigen Levels in a Screening Population". Poster presentation, Duke University Medical Center Comprehensive Cancer Center Annual Meeting, Published Abstract p. 137.
 40. **Price, M.M.** (2006, March). "Intergenerational Influences on Cervical Cancer Screening in African American Women in Eastern North Carolina", Poster presentation, Duke University Medical Center Comprehensive Cancer Center Annual Meeting, Published Abstract p. 138.
 41. Echols, P. & **Price, M.M.** (2006, April). "The Association of Race on Prostatic Specific Antigen (PSA) Velocity and PSA Doubling Time Prior and Post Radical Prostatectomy", Podium presentation, Intercultural Cancer Council-10th Biennial Symposium on Minorities, the Medically Underserved and Cancer, Baylor College of Medicine-Houston, TX, held in Washington, D.C.
 42. **Price, M.M.** & Robertson, C.N. (2006, March). "Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics". Poster presentation, Duke University Medical Center Comprehensive Cancer Center Annual Meeting, Published Abstract p. 139.
 43. **Price, M.M.** (2006, June). "Prostate Cancer Screening: Coming to Terms with Controversies". Podium presentation, American Academy of Nurse Practitioners, 21st National Conference, Dallas, Texas.
 44. **Price, M.M.** (2007, June). "Latest Developments in HPV-related diseases and Cervical Cancer". Podium presentation, American Academy of Nurse Practitioners, 22nd National Conference, Indianapolis.
 45. **Price, M.M.** (2007, June). "Prostrate Cancer Screening: What Will We Tell Our Patients?". Podium presentation, American Academy of Nurse Practitioners, 22nd National Conference, Indianapolis.
 46. Rachael Williams, Florian R. Schroeck, Kadi-Ann N. Bryan, **Marva Price**, Leon Sun, and Judd W. Moul. "Clinical and Pathological Variables: Predictors of PSA Recurrence after Radical Prostatectomy". 9th Annual Surgical Urologic Oncology Meeting, Natcher Conference Center, National Institutes of Health, Bethesda, December 4-5, 2008.
 47. Bryan, K.A.N., Florian, S.R., Willams, R., **Price, M.**, Sun, L., and Moul, J.W. "Independent predictors for PSA recurrence after radical prostatectomy: Gleason score 3+4 versus 4+3 and percent tumor involvement". Podium presentation, Southeastern Section American Urological Association 72nd Annual Meeting, San Diego, March 2008.
 49. Florian R. Schroeck, Tracey L. Krupski, Leon Sun, David M. Albala, **Marva M. Price**, Thomas J. Polascik, Cary N. Robertson, Alok K. Tewari, and Judd W. Moul. "Predictors for satisfaction and regret after three different types of radical prostatectomy". Poster presentation, Duke University Medical Center Annual Cancer Symposium, March 12, 2008.
 50. Koontz, B. F., Wright, T., **Price, M.**, Polascik, T. J., Mayes, J. M., Wong, T. Z., Madden, J., & Mouraviev, V. (2008, May). "Indium Capromab Pendetide Scintigraphic Imaging prior to Surgical Management of Prostate Cancer". Poster presentation, American Urological Association Annual Meeting, Orlando, Fl. May 17-22, 2008. Tracking Number: 08-AB-95342-AUA.
 51. Schroeck, F.R., Sun, L., Levy, D. E., Bryan, K. N., Freedland, S. J., Jayachandran, J., **Price, M.**, Willams, R. and Moul, J.W. "Race and prostate weight as independent predictors

for biochemical recurrence after radical prostatectomy”. Moderated poster presentation, American Urological Association Annual Meeting, Orlando, FL, May 17-22, 2008. Control #: 94880.

Organizations and participation (regional and local):		
Dates	Office held and/or Committee Assignment	Organization
2002-2003	<u>International:</u> Member	Union of International Cancer Congress Nursing Committee, Geneva, Switzerland. Congress, Oslo, Norway
2002-2004	Member	International Society of Nurses in Cancer Care (ISNCC)
1974-present	<u>National:</u> Member	American Public Health Association
1974-2002	Member	American Nurses Association
1978-2004	Member	National Black Nurses Association (local chapter: Central Carolina Black Nurses Association)
1998-2004	Member Scientific Advisory Board Member	American Social Health Association, RTP, NC, National Cervical Cancer and Human Papilloma Virus Project
1995-present	Member	Oncology Nursing Society
January-August 2000	10 member committee from across the U.S. charged with planning a community outreach course on cancer screening and detection for 300 oncology nurses	ONS National Challenge Conference, Conference held in Atlanta, September 14-17, 2000

January – April 2002	Committee Member for participant follow up and to plan a reunion luncheon and poster session	Invitational for Best 100 Oncology Nurse Community Outreach Cancer Prevention and Early Detection Programs, held in Washington, D.C., April 20, 2002
1997-2004	Member 2003-2006	National Association of Nurse Practitioner Faculties (NONPF).
2006-	Member, Clinical Doctorate Task Force, National Organization of Nurse Practitioner Faculties (NONPF)	
March 2005	Chair, subcommittee on Faculty Qualifications, Faculty Development, and Student Admissions Criteria	
	Member, National The Susan G. Komen Breast Cancer Foundation African American Advisory Council	Meetings 2 x year
1994; serving 4 rd term; Gubernatorial appointment	<u>State:</u> Member, the Public Health Commission writes the rules for all legislation passed by the North Carolina General Assembly including environmental and personal health legislation, immunization laws, restaurant and lodging grading standards, childcare facility, food establishment grading standards, HIV, smallpox, other communicable disease control.	Governor's 12 member Commission for Health Service (Public Health Commission), Raleigh. Quarterly meetings.
1995-1997	Chair, Evaluation and improvement of cancer screening services (clinical, laboratory, and radiological) for women in private and public sector clinics	North Carolina Health and Human Services, Department of Health, Breast and Cervical Cancer Assurance Committee
2000-present	Member, Board of Advisors and Fellowship selection subcommittee. The Foundation provides paid fellowships for community service learning projects conducted by medical, dental, nursing, veterinarian, and law graduate and professional students across North Carolina universities with major medical centers.	The Albert Schweitzer Foundation; fellow interview and selection annually in March; fellowship mentorship, and guidance in seminar development; meetings once a year, Duke School of Nursing student mentoring.
2001-2002	Member	Old North State Medical Society, Raleigh-Durham Chapter
1975-present	Member;	North Carolina Nurses Association (formerly District Eleven)
1985-1987	Secretary for Triangle Region;	
2001-2003	Commission on Standards and Practice	
January 2000	Participant, North Carolina Nurses Association Leadership Day	North Carolina Nurses Association
January 2000-2001	Participant, Awards Selection Committee for Outstanding Nursing Leadership and Service	North Carolina Nurses Association
2001-2003	Commission on Standards and Practice	
February 2003	Member, Advisory Board	North Carolina Nurses Association University of North Carolina School of Public Health, Department of Maternal and Child Health, participated in review of candidates for department chair; annual board meetings
1986-1987	<u>Local:</u> Member, Board of Directors	Piedmont Health Care, Inc. Federally funded primary care centers in three rural North Carolina counties

1993-1994	Chair	Chatham County Board of Health
1989-2000	Board Member	
2001-2004	Member	Copernicus Group Independent (International) Review Board, Inc. Cary, NC
2001-2004, County Commissioners Appointment 2004	Member, official certifier for Board proceedings	Orange-Chatham-Person Developmental Disabilities and Mental Health Authority (Mental Health Board), monthly meetings
	Executive Board and Health Committee Member	Carolina Meadows Retirement Community, a 700 resident continuing care retirement community, meetings four times a year

External Support Grant funding:

PI	% Effort	Purpose	Amount	Duration
PRESENT Principal Investigator, U.S. Army Department of Defense	15%	Collaboration Around Research and Education (CARE) in Prostate Cancer with Bennett College, Greensboro, N.C. to provide beginning prostate cancer education to 12 undergraduate science (biology) students over three years.	\$193,136	Funding cycle 2007-2009
PRESENT Principal Investigator, U.S. Army Department of Defense	20%	Partnering Research Involving Mentoring and Education (PRIME) in Prostate Cancer Training Grant with North Carolina Central University to provide beginning prostate cancer education to 12 undergraduate nursing students over three years.	\$199,000	Funding cycle 2005-2008
Principal Investigator, U.S. Army Department of Defense (Co-PI Mentor: Cary Robertson, M.D., DUMC)	47%	Prostate Cancer Screening, Health Disparity Research-Prostate Scholar Award: Increasing Sustained Participation in Free Mass Prostate Cancer Screening Clinics Mentor: Cary Robertson, M.D. Scientific Mentor: Paul Godley, M.D., Ph.D., Surgical Oncologist, Attend monthly seminars in Methods in Health Disparity Research, cosponsored by the Cecil Sheps Center, UNC School of Public Health; and Lineberger Comp. Cancer Center.	\$406,421.00	Funding cycle 2002- 2006
PI, Cervical Cancer Screening, International		Attitudes and Practices for	\$500	June 2002-

Nurses Survey		Cervical Cancer Screening Among International Nurses in Cancer Care. Surveys conducted at the UICC Congress, Oslo, Norway, June-July 2002 & the International Nurses in Cancer Care, London, August-September 2002	District Eleven, North Carolina Nurses Association	June 2003
PI, Department of Defense	30%	Using a Tracking System to Improve Prostate Cancer Screening Follow-up in a Small Urban	\$74,984	2000-2001
PI, Avon-NABCO, Inc	25%	Breast Cancer Access Grant for Nurse Practitioners in Nine-County Area in Southeastern North Carolina	\$75,000 (\$5,000 match by Carson Products, Savannah)	October 1997-98
PI, (Pre-doctoral Fellow), NCI sponsored Cancer Control Education Research Program (CCEP) University of North Carolina Lineberger Comprehensive Cancer Center, Training Grant –CA64060	45%	Intergenerational Influences on Cervical Cancer Screening Dissertation Research	\$20,000	1995-1996
PI, Association of School of Public Health and The Association of Teachers of Preventive Medicine, National Center for Infectious Disease, Division of HIV/AIDS, Surveillance Branch, CDC, Atlanta		Protocol Development for Resource Assessment of HIV+ pregnant women's access and use of AZT and other social and medical resources	\$20,000 \$23,000	Renewed 1996-97 1994-1995

Clinical Practice (after hours back-up):

Family Nurse Practitioner, Duke University Medical Center Department of Obstetrics and Gynecology, Durham, NC, for Lincoln Community Health Center Prenatal Clinic; approved to practice by the NC Board of Nursing & NC Medical Board to practice as FNP.
Duke IRB #6, 2004- 2008 Departmental Reviews.

Acting Program Director, Oncology Nursing Curriculum, Fall 1999 to August 2000, 30 advisees.

Assistant Professor, School of Nursing, Duke University, Durham. 8/1996-.
Master of Nursing Family Nurse Practitioner Specialty Director, 2002 - 2007, 75 Master of Nursing students.

Appointment, Duke University Comprehensive Cancer Center, Department of Cancer Control and Prevention, 2003.

Rachael Williams, Bennett College for Women
Research Mentor: Leon Sun, MD, PhD
Division of Urologic Surgery, Dept of Surgery, Duke Prostate Center

**Clinical and Pathological Variables:
Predictors of PSA Recurrence after Radical Prostatectomy**

Background: The presence of Prostate Specific Antigen (PSA) after radical prostatectomy for treatment of clinically localized prostate cancer is considered to be PSA recurrence. Several studies have found various clinical and pathological factors, including age, seminal vesicle invasion (SVI), PSA, and Gleason score, to be predictors of PSA recurrence after radical prostatectomy. These studies, however, have mainly been conducted in the western and northeastern regions of the United States, but none have been conducted in the southeast where there is a significantly higher population of African American males.

Purpose: The aim of this study is to determine which clinical and pathological variables are predictors of PSA recurrence after radical prostatectomy as based upon a patient population generated in the southeast.

Methods: Data were extracted from the Duke University Prostate Cancer Database, a Duke University IRB approved registry of men who underwent radical prostatectomy at Duke University Prostate Center. In total, there were 3996 prostate cancer patients treated with radical prostatectomy from 1970 to 2007 of which 15% were African American, 85% non-African American, 34% < 60 years old, 48% were between 60 to 70 years old, and 18% >70 years old. Clinical and pathological data including age, race, pretreatment PSA, clinical Gleason score, pathological stage (pT), surgical margins, BMI, and pathological Gleason score was analyzed using Kaplan-Meier estimates and Cox proportional hazards regression to assess which best predict PSA recurrence after radical prostatectomy.

Results: In univariate analysis, clinical Gleason score, age, race, pre-treatment PSA, pathological Gleason score, surgical margins, and pT were found to be predictors of PSA recurrence after radical prostatectomy. BMI ($p=0.1601$) did not affect PSA recurrence and therefore was not included in multivariate analysis. In multivariate analysis, age ($p<0.022$), pre-treatment PSA ($p<0.001$), pathological Gleason score ($p<0.001$), surgical margins ($p<0.001$), and pT ($p<0.001$) were found to be predictors of PSA recurrence after radical prostatectomy with race ($p=0.407$) being insignificant.

Conclusions: The results confirm the findings of previous studies conducted in other parts of the U.S. that race is not an independent predictor of PSA recurrence after radical prostatectomy. They are also in line with previous studies which show that age, PSA, pathological Gleason score, surgical margins and pT are predictors of PSA recurrence. Further research should involve developing a prediction model that can be used in clinical practice to counsel patients about their risk of PSA recurrence after radical prostatectomy.

Impact: This study will play an important role in counseling future candidates for radical prostatectomy.

Nitrecus Simmons, Bennett College for Women
Research Mentor: Stephen J. Freedland, MD
Division of Urologic Surgery, Dept of Surgery, Duke Prostate Center

**A Comparative Study of Genetic Susceptibility
and Risk Factors for Men with and without Prostate Cancer**

Background: Previous studies have shown that genetic variations of the IGF1 gene and differences in serum occur in both men with and without prostate cancer; however they have shown limited data among minorities. In addition, researchers have found that the repeated occurrence of the homozygous IGF1 gene was much lower in African American men than Caucasian men, which may explain the increased prostate cancer incidence in Black men versus White men.

Purpose: The aim of this study is to compare predisposing genetic factors for men with prostate cancer versus men without prostate cancer to determine those risk factors which will predict a greater likelihood of a positive biopsy among minorities undergoing a prostate needle biopsy.

Methods: The 32 patients in this study consisted of minorities ranging from the age of 40 to 70 years of age and were chosen from the Durham VA. The patients were chosen based on PSA (prostate specific antigen) and DRE (digital rectal exam) exams and placed in groups depending on the results of their prostate needle biopsy. Once patients had consented questionnaires and blood samples were collected for analysis. DNA was extracted to identify and compare potential predisposing genetic factors. Information on other factors such as physical activity, dietary eating habits, and serum was also collected and they were examined as contributors to prostate cancer. In conducting this study we looked for subtle differences in the DNA to show what genes are susceptible in men with and without prostate cancer.

Results: It is expected that serum IGF1 (insulin growth factor) will be higher in men with prostate cancer and lower in men without prostate cancer. IGF1 is a factor that is responsible for cellular growth, multiplication, and replacement in adults. The best predictor for determining the likelihood of prostate cancer was the presence of different forms of the IGF1 gene in DNA.

Conclusion: In conclusion, men with prostate cancer are more likely to have a high IGF1 due to the growth and metastases of prostate cancer cells. Therefore, genes (IGF1) are correlated to prostate cancer in that their presence in DNA causes cancer cells to grow at a rapid pace.

Impact: This research will provide knowledge of the increased vulnerability to prostate cancer in minorities due to genes, other contributing risk factors, and ways of preventing prostate cancer in advance. Understanding how genes may make some more susceptible to prostate cancer helps researchers develop tests to determine the necessary forms of screening

and treatments for potential prostate cancer patients.

Tiera Wright, Bennett College for Women

Research Mentor: Thomas J. Polascik, MD, FACS and Vladimir Mouraviev, MD, PhD
Division of Urologic Surgery, Dept of Surgery, Duke Prostate Center

Targeting the Source: The Effectiveness of ProstaScint

Background: The ProstaScint test, first used in 1997, is an FDA-approved scan that was developed to specifically site cancerous cells in the lymph nodes and the location of metastases. In a previous study, ProstaScint was used as a diagnostic tool to detect metastasized prostate cancer in lymph nodes or other extra capsular sites. Because ProstaScint is still a relatively new method, more research is needed to confirm the accuracy of ProstaScint scanning, such as identifying other markers that are also present with cancerous growths and metastases.

Purpose: The purpose of my study is to test the accuracy of the ProstaScint test before a radical prostatectomy through comparison with other indicators of prostate cancer. ProstaScint should be able to pinpoint the location of cancer and reveal whether or not it has metastasized.

Methods: Data was extracted from two databases maintained at Duke University Medical Center (DUMC). Patients who had the ProstaScint test post-op were excluded from analyses. Patient records were extracted from a database consisting of 160 patients with prostate cancer seen by R. Edward Coleman, MD at DUMC. All the patients in this database had a radical prostatectomy between 2006 and 2007. Twenty patients from this database met the criteria for this study. In the database produced by Thomas J. Polascik, MD, FACS, DUMC, there were 270 patients seen between 1997 and 2007 at DUMC. Fifty-six patients from this database met the criteria. For final analyses, data was extracted on seventy-six patients from the two databases. The variables analyzed using cross tabs and Chi-square in SPSS included ProstaScint scan data, Gleason score, prostate specific antigen (PSA), surgical margins, and extra capsular extension (ECE) to determine if ProstaScint accurately identifies the location of cancerous cells and masses.

Results: None of the variables analyzed were found to be indicative of the effectiveness of ProstaScint scanning. Neither Gleason score (PSA) ($p=.603$), surgical margins ($p=.693$), nor extra capsular extension (ECE) ($p=.722$) were significant at an alpha-level of $p=.05$. No data collected conclusively verified the successfulness of ProstaScint scanning.

Discussion: Though ProstaScint can effectively detect localized metastasized cancer, there is no evidence proving that the scan can effectively site the location of capsular cancer. Further research should be conducted examining other factors or markers that may be better corroborators of the accuracy of ProstaScint scanning.

Impact: The continuous use of the ProstaScint test by surgeons and doctors may drastically reduce or potentially eliminate metastasized cancer post-op, particularly for cases involving radical prostatectomy.

Cymara Tolbert-Warren, Bennett College for Women
Research Mentor: Stephen J. Freedland, MD
Division of Urologic Surgery, Dept of Surgery, Duke Prostate Center

Prostate Cancer: How Diet Effects Tumor Growth

Background: Diet and nutrition are critical components of health maintenance. One-third of cancer deaths in the United States may have been prevented in part by healthier diets. Previous research has shown that a ketogenic diet slows tumor growth and keto bodies inhibit cancer. If the brain lacks glucose, ketone bodies are produced to provide the brain with glucose. Ketosis may be induced by two methods: depriving the body of food or consuming a diet low in glucose.

Purpose: The purpose of this study is to induce ketosis through a specific diet in mice. Once the proper diet is identified, the diet will be replicated and tested in humans.

Methods: One hundred and five Severe Combined Immune Deficiency (SCID) mice were injected with LAPC-4 xenografts. The mice were randomized into seven groups of fifteen and each group was placed on different variations of a Western diet at different caloric levels. Out of the seven groups, two were given an ad-lib amount of food, but had different feeding schedules. Three of the groups were fasted different times during the week and three were fed a restricted diet. All food was administered to the mice on different feeding schedules. Food measurements were recorded daily. Tumor sizes and weights for each mouse were measured biweekly. Mice were euthanized when the volume of the tumor averaged out to 1500 mm or more. The mice were also euthanized if ulcerations of the tumor occurred. From each mouse euthanized, blood samples along with the liver, the tumor, and the prostate were collected for further examination and research.

Results: The mice that were fasted the most during the week and placed on a restricted diet had the highest survival rate. Mice from the other groups died sooner because they failed to achieve the same level of ketosis despite their low caloric intake.

Discussion: The group of mice who were fasted and placed on a restricted diet lived the longest because they became ketotic. Ketone bodies slow the growth of their tumors. Therefore, a diet lower in calories or even a fasting diet increases the rate of survival and slows tumor growth.

Impact: This research has the potential of impacting the prevention not only for prostate cancer, but all cancers. If people understand the importance of a healthy diet and are equipped with the knowledge and tools to make the proper lifestyle changes, it could initially

mean higher survival rates and a slowing and reduction in tumor growth. The long-term ramifications of this research would be understanding cancer and developing successful methods for prevention until a cure is found.

Submitting Author: Cymara Tolbert-Warren, Bennett College for Women
Role: Department of Defense Duke-Bennett College for Women Undergraduate Prostate Cancer Research Program
Sponsor: Marva Price, DrPH, RN, FAAN
Duke University Medical Center Annual Cancer Center Symposium, March 12, 2008

Effect of Intermittent Caloric Restriction on Prostate Cancer Growth and Survival in Mice

Cymara Tolbert-Warren¹, Stephen Freedland^{2,3}, Cooper Buschemeyer^{2,3}, Joseph Klink^{2,3}, John Mavropoulos^{2,3}, Lionel Banez^{2,3}, Jay Jaychadran^{2,3}, Tracy Johnson^{2,3}, Susan Poulton^{2,3}, Stephen Hursting^{2,3}, Marva Price^{3,4}

¹Bennett College for Women, ²Duke University Medical Center Prostate Center, ³Duke University Prostate Center, ⁴Duke University School of Nursing

Caloric restriction (CR) is the most potent dietary intervention to delay cancer growth in animals, though translation to humans is difficult. Intermittent CR (ICR), in theory should be more easily tolerated, but efficacy has not been well studied. Using 105 severe immune deficiency (SCID) male mice housed individually, we proposed that ICR would result in prolonged survival and decrease tumor burden of prostate cancer bearing mice compared to mice fed ad-libitum.

After two weeks of ad-libitum feeding, mice were injected with 1×10^6 LnCap cells in Matrigel. Tumors were measured and mice weighed twice weekly. When tumors reached 200 mm^3 , 15 mice/group were randomized to one of seven diets and sacrificed when tumors reached 1500 mm^3 : groups included ad-libitum feeding, fasting & ad-libitum feeding, fasting & ad-libitum with prevention of over eating; two groups of restricted calorie intake, and fasting & ad-libitum feedings on selected days. Overall, there were no significant differences in survival (overall log-rank, $p=0.31$, all individual $p>0.1$). Trends for both groups included 2 days/week fast to have better survival than the ad-lib fed mice; these did not reach statistical significance (HR 0.59-0.60, $p=0.16$ to 0.18). Similarly, trend for the 7 days of restricted calorie was for prolonged survival, though not significant (HR=0.59, $p=0.17$). Mice on a 2 day/5 day ad-libitum fed had similar survival as the mice fasted 2 days/5 day ad libitum feed (HR 1.12, $p=0.77$) and 7 days restricted calories (HR 1.00, $p=0.99$). Mice fasted 2 days/5 day ad libitum fed had similar body weights as the ad-lib fed mice at all time points (all $p>0.05$). Within a mean of nine days after randomization, mice 2 day fast/ad libitum feed and 7 days restricted calories had significantly lower body weights than the ad-lib mice, and weights remained lower for the rest of the study (all $p<0.05$). In this relatively underpowered study, CR or ICR did not slow prostate cancer growth, though suggesting that fasting twice a week with ad-lib feeding on the non-fasting days delayed tumor growth without weight loss. Tumor growth delay was not significant. If this suggestion of delayed growth is confirmed in larger studies, ICR may have benefit.

Clinical and Pathological Variables: Predictors of PSA Recurrence after Radical Prostatectomy

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Intercultural Cancer Conference, Baylor University, held in Washington, DC, April 3-6, 2008.

Background: The presence of Prostate Specific Antigen (PSA) after radical prostatectomy is considered to be PSA recurrence. Several studies have found various clinical and pathological factors, including age, seminal vesicle invasion (SVI), PSA, and Gleason score, to be predictors of PSA recurrence.

Rationale and Purpose: The aim of this study is to determine which clinical and pathological variables are predictors of PSA recurrence based upon patients in the southeast.

Methods: Data were extracted from the Duke University Prostate Cancer Database. In total, there were 3,996 prostate cancer patients treated with radical prostatectomy from 1970 to 2007 of which 15% were African American, 85% non-African American, 34% < 60 years old, 48% were between 60 to 70 years old, and 18% >70 years old. Clinical and pathological data including age, race, pretreatment PSA, clinical Gleason score, pathological stage (pT), surgical margins, BMI, and pathological Gleason score was analyzed using Kaplan-Meier estimates and Cox proportional hazards regression to assess which best predict PSA recurrence after radical prostatectomy.

Results and Conclusions: Clinical Gleason score, age, race, pre-treatment PSA, pathological Gleason score, surgical margins, and pT were found to be predictors of PSA recurrence. Age ($p<0.022$), pre-treatment PSA ($p<0.001$), pathological Gleason score ($p<0.001$), surgical margins ($p<0.001$), and pT ($p<0.001$) were found to be predictors of PSA recurrence, with race ($p=0.407$) being insignificant.

The results confirm findings of previous US studies that race is not an independent predictor of PSA recurrence after radical prostatectomy. Further research should involve developing a prediction model that can be used in clinical practice to counsel patients about their risk of PSA recurrence.

Implications: This study is important in counseling future candidates for radical prostatectomy.

Independent Predictors For Psa Recurrence After Radical Prostatectomy: Gleason Score 3+4 Versus 4+3 And Percent Tumor Involvement

Kadi-Ann N. Bryan¹, Florian R. Schroeck¹, **Rachael Willams^{1,3}**, Marva Price^{1,2}, Leon Sun¹, and Judd W. Moul¹

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Objectives: To assess traditional and novel independent predictors of PSA recurrence (PSAR) after radical prostatectomy (RP) in a patient population from the Carolinas.

Methods: All patients who underwent RP between 1987 and 2007 at the Duke Prostate Center (DPC) were retrieved from the DPC longitudinal database. Age, race (African American (AA) vs. non-AA), PSA, clinical and pathological stage, biopsy and final pathological Gleason (pG) score, D'Amico risk classification, lymph node status, seminal vesicle invasion (SVI), extracapsular extension, positive surgical margin (PSM) status, prostate weight and percent tumor involvement (PTI) were evaluated as possible predictors of PSAR in univariate (Kaplan Meier) and multivariate (Cox regression) analysis. PSAR was defined as a PSA of 0.2 ng/ml or higher at least 30 days after surgery.

Results: 3602 patients were included in the analysis. Mean follow-up was 6.1 (SD=4.2) years. Mean age was 62.7 (SD=7.4) years. Predictors of PSAR in univariate analysis were age ($p<0.0001$), race ($p=0.0012$), PSA ($p<0.0001$), clinical and pathological stage ($p<0.0001$), biopsy and pG score ($p<0.0001$), D'Amico risk classification ($p<0.0001$), positive lymph node status ($p<0.0001$), SVI ($p<0.0001$), extracapsular extension ($p<0.0001$), PSM status ($p<0.0001$), prostate weight ($p=0.0001$), and PTI ($p<0.0001$). In multivariate analysis, natural logarithm of PSA [hazard ratio 1.51 (95% confidence interval 1.38-1.65)], pG score [1.29 (1.07-1.55), 1.62 (1.28-2.05), 2.15 (1.73-2.68) for pG 3+4, 4+3, >7, respectively], SVI [1.63 (1.34-1.99)], PSM [1.51 (1.29-1.77)], PTI [1.01 (1.00-1.01)] and pathological stage T3-4 [1.43 (1.19-1.70)] were identified as independent predictors of PSAR ($p<0.001$ for all factors).

Conclusion: Risk of PSAR for pG scores 3+4, 4+3 and >7 increased almost linearly. To our knowledge this is the first study to demonstrate that PTI is an independent predictor of PSAR. For each point of PTI, the risk for PSAR increases by one percent.

Control/Tracking _Number: 08-AB-94880-AUA

Race and prostate weight as independent predictors for biochemical recurrence after radical prostatectomy

Florian R Schroeck, Leon Sun, Donna E Levy, Kadi-Ann Bryan, Stephen J Freedland, Jayakrishnan Jayachandran, Marva Price, **Rachael Williams**, Judd W Moul, Durham, NC

Abstract:

Introduction and Objective: Current nomograms for prediction of biochemical recurrence (BCR) after radical prostatectomy (RP) are mainly based on stage, grade, PSA, and pathological variables. We hypothesized that factors beyond these would be important predictors of BCR. We sought to identify these factors and, together with the more traditional factors, develop a new nomogram to predict BCR after RP.

Methods: All patients who underwent RP between 1988 and 2007 at the Duke Prostate Center (DPC) and who had neither neoadjuvant therapy nor postoperative adjuvant hormonal therapy prior to BCR were retrieved from the DPC database. Age, PSA, pathological stage and Gleason score (pG), lymph node status, seminal vesicle invasion (SVI), extracapsular extension (ECE), positive surgical margin (PSM) status, year of surgery, race, adjuvant radiation therapy (XRT), percent tumor involvement in the RP specimen, and prostate weight were evaluated as possible predictors of BCR in multivariate Cox regression analysis. BCR was defined as a PSA of 0.2 ng/ml or higher at least 30 days after surgery. Patients who had XRT prior to BCR and within one year of RP were defined as having adjuvant XRT, whereas patients who had XRT prior to BCR but more than 1 year after RP were treated as having failed primary therapy at the time point of XRT. A nomogram was developed from the Cox model. Predictive accuracy was obtained by calculating bias-corrected Harrell's c and by bootstrap calibration.

Results: 3194 patients had data available for the analysis. Mean follow-up for patients without BCR was 4.7 (SD=3.8) years. Mean age was 62.3 (SD=7.5) years. In multivariate analysis, natural logarithm of PSA [hazard ratio 1.39 (95% confidence interval 1.29-1.51)], ECE [1.22 (1.04-1.44)], pG score [1.38 (1.14-1.68), 2.23 (1.76-2.84), 2.69 (2.12-3.40) for pG 3+4, 4+3, >7, respectively], SVI [1.72 (1.40-2.12)], PSM [2.05 (1.73-2.42)], year of surgery [0.65 (0.54-0.77)], African American race [1.37 (1.13-1.66)], adjuvant XRT [0.19 (0.11-0.34)], and natural logarithm of prostate weight [0.83 (0.76-0.92)] were identified as independent predictors of BCR ($p \leq 0.018$ for all factors). Predictive accuracy of the nomogram for 10 year BCR-free survival was 0.75 (Harrell's c). **Conclusions:** Race and prostate weight were readily available and statistically significant independent predictors for BCR after RP. By incorporating these as well as well known predictors of BCR, we have developed a nomogram, which provides a highly accurate means for estimating risk of BCR after RP.

STUDY PERSONNEL

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